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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/982,623	10/18/2001	Kotaro Takagi	450100-03551	8606
20999	7590	12/28/2004	EXAMINER	
FROMMER LAWRENCE & HAUG 745 FIFTH AVENUE- 10TH FL. NEW YORK, NY 10151			FRAZIER, OWEN J	
			ART UNIT	PAPER NUMBER
			2687	

DATE MAILED: 12/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)	
09/982,623	TAKAGI, KOTARO	
Examiner	Art Unit	
Owen J Frazier	2687	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7 and 8 is/are rejected.
- 7) ☒ Claim(s) 6, 9-11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/18/2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. Figures 4A, 4B, and 6 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Damgaard (US Pat# 6,487,219).

Regarding claim 1, Damgaard teaches in figures 1-6, rf architecture for multi-band telephones which is compatible with a plurality of communication methods with a means for producing a signal of intermediate frequency with a first signal generating means (57), a second signal generating means (71) and a third signal generating means (35) for generating a signal of a local oscillation frequency by subjecting first signal and second signal to predetermined arithmetic. Damgaard teaches that the local oscillation frequency is equal to the frequency of the wanted rf signal minus the intermediate frequency for low side injection and equal to wanted rf signal plus intermediate frequency for high side injection (Col. 7). This does not specifically point out that the local oscillation frequency is equal to the received frequency, however one of ordinary skill in the art at the time the invention was made would recognize that you can modify the wanted rf signal in the equation to be higher or lower in order to make the local oscillation frequency equal to the received frequency. Alternatively, after the local oscillation signal is attenuated it is most likely going to be equal to the received frequency (Col. 7). One would be motivated to do this so that the same frequency can be used to other circuit blocks.

Regarding claim 2, Damgaard teaches the third signal generating means forms a single image reject (removing) mixer (Fig. 5 131), and the first signal (67) from first signal means (57) is a single source for the first variable frequency input side of the image removing mixer (Col. 7).

Regarding claim 3, Damgaard teaches the second generating means generates the second signal by dividing (85, 120) the frequency of said signal of the intermediate

frequency for transmission used by the first signal transmission used by first signal generation means, and the second signal generating means is a signal source (signal going into 141, 142) for a second variable frequency input side of the image removing mixer (131) (Figures 1-6, Col. 5-7).

Regarding claim 4, Daamgaard teaches the intermediate frequency for transmission and a value of said frequency division are set such that the frequency of the second signal obtained by dividing the intermediate frequency for transmission (14) becomes equal to a difference between said transmission frequency and received frequency (Col 6 lines 27-28 and Col 7 line 47).

Regarding claim 7, Daamgaard does not teach a buffer amplifier inserted in the signal path between the first signal generating means and the image removing mixer. However, buffer amplifiers are well known in the art and it would be obvious to one of ordinary skill in the art at the time of invention to include one for the obvious reason that buffer amplifiers prevent conducted-interference problem from VCO.
(<http://www.mwrf.com/Articles/ArticleID/5513/5513.html>).

Regarding claim 8, Damgaard fails to teach the bias power to the buffer amplifier is turned off when the multi-band portable radio is in a period of transmission. However, it would be obvious to one of ordinary skill in the art to do this because the radio is not receiving and transmitting at the same time.

4. Damgaard (US Pat# 6,487,219) in view of Thomsen (US Pat# 6,584,304).

Regarding claim 5, Damgaard teaches in figure 5 that the first (67) and second (signal going into 141,142) signals are orthogonal to each other and that the third signal

generating means (131) takes in the orthogonal signals for multiplication (141,142) (Col. 7). Damgaard fails to teach the results being added together. Thomsen teaches an image removing mixer in figure 5 which adds the results together. Therefore it would have been obvious at the time of invention to include the teaching of Thomsen into that of Damgaard for the obvious reason that there will be a fewer number of filters involved than in Damgaard's (he has filters after the image removing circuit) and they are more simple filters that can be used, thus reducing the production cost and facilitating the miniaturization of the mobile radio (Thomsen Col. 2 lines 1-6 and lines 42-52).

Allowable Subject Matter

5. Claims 6 and 9-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Snider (US Pat# 6,487,219) and Mizumoto (US Pat# 6,393,299).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Owen J Frazier whose telephone number is (703) 305-0548. The examiner can normally be reached on Monday-Friday 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on (703) 306-3016. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2687

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


ELISEO RAMOS-FELICIANO 12/22/07
PATENT EXAMINER